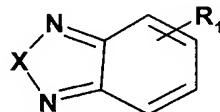


Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

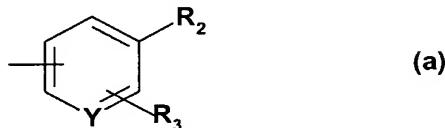
Listing of Claims:

1. (Original) A compound of formula I



I

wherein X is O or S, R₁ is 5-(2-fluoro-ethylamino)-thiazol-2-yl, 5-(2-¹⁸F-ethylamino)-thiazol-2-yl or a group of formula (a)

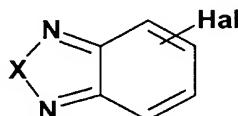


(a)

wherein Y is CH or N, R₂ is NHCH₃, NH¹¹CH₃, N(CH₃)¹¹CH₃, N(CH₃)₂, N(¹¹CH₃)₂, NH(CH₂)_nF, NH(CH₂)_n¹⁸F, N(CH₃)-(CH₂)_nF, N(CH₃)-(CH₂)_n¹⁸F, O-(CH₂)_nF, O-(CH₂)_n¹⁸F, CONH(CH₂)_nF or CONH(CH₂)_n¹⁸F (n being in each case 2 to 4) and R₃ is hydroxy, (C1-4)alkoxy, hydrogen or nitro, in free base or acid addition salt form.

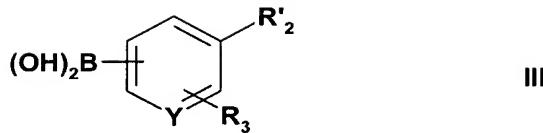
2. (Original) A process for the production of a compound of formula I as defined in claim 1 and its salts, comprising the steps of

a) for the production of a compound of formula I which contains no ¹¹C or ¹⁸F atom,
reacting a compound of formula II



II

wherein X is as defined in claim 1 and Hal is Cl, Br or I, with 5-(2-fluoro-ethylamino)thiazolyl-2-boronic acid or a compound of formula III



wherein Y and R₃ are as defined above and R'2 is a group R₂ as defined above which contains no ¹¹C or ¹⁸F atom, or

- b) for the production of a compound of formula I wherein R₁ is 5-(2-¹⁸F-ethylamino)-thiazol-2-yl, reacting a compound of formula I wherein R₁ is 5-(2-mesyloxy-ethylamino)-thiazol-2-yl or 5-(2-tosyloxy-ethylamino)-thiazol-2-yl with ¹⁸F[⊖], or
- c) for the production of a compound of formula I wherein R₂ is NH¹¹CH₃, N(CH₃)¹¹CH₃ or N(¹¹CH₃)₂, reacting a compound of formula I wherein R₂ is NH₂ or NHCH₃ with ¹¹CH₃I, or
- d) for the production of a compound of formula I wherein R₂ is NH(CH₂)_n¹⁸F,
N(CH₃)-(CH₂)_n¹⁸F, O-(CH₂)_n¹⁸F or CONH(CH₂)_n¹⁸F, reacting a compound of formula I wherein R₂ is, respectively, NH(CH₂)_nOTs or NH(CH₂)_nOMs, N(CH₃)-(CH₂)_nOTs or N(CH₃)-(CH₂)_nOMs, O-(CH₂)_nOTs or O-(CH₂)_nOMs, or CONH(CH₂)_nOTs or ONH(CH₂)_nOMs, with ¹⁸F[⊖],

and recovering the resulting compound of formula I in free base form or in form of an acid addition salt.

3. (Original) A composition for labeling histopathological structures in vitro or in vivo, comprising a compound of formula I as defined in claim 1, in free base or acid addition salt form.

4. (Withdrawn) A method for labeling histopathological structures in vitro or in vivo, comprising contacting brain tissue with a compound of formula I as defined in claim 1, in free base or acid addition salt form.

5. (Withdrawn) A method according to claim 4, for labeling β-amyloid deposits.

6. (Withdrawn) A method according to claim 4, comprising administering the compound of formula I to a patient.
7. (Withdrawn – currently amended) A method according to ~~any of~~ claim 4, comprising the further step of determining whether the compound of formula I labeled the target structure.
8. (Withdrawn) A method according to claim 7, comprising observing the target structure labeled with a non-radioactive compound of formula I, using fluorescence microscopy.
9. (Withdrawn) A method according to claim 7, comprising observing the target structure labeled with a radioactive compound of formula I, using positron emission tomography (PET).
10. (Withdrawn) A method according to claim 4 for diagnosing Alzheimer's disease.
11. (Withdrawn) A method according to claim 10, for monitoring the effectiveness of a therapeutic treatment of Alzheimer's disease.
12. (Withdrawn) A method according to claim 4, for detecting histopathological hallmarks of Alzheimer's disease.
13. (Cancelled)
14. (Original) A package comprising a compound of formula I wherein R₂ is NH₂ or NHCH₃ together with instructions for the production of a compound of formula I wherein R₂ is NH¹¹CH₃, N(CH₃)¹¹CH₃ or N(¹¹CH₃)₂ by reaction of the starting material with freshly prepared ¹¹CH₃I.
15. (Original) A package comprising as starting material a compound of formula I wherein R₂ is NH(CH₂)_nOTs, NH(CH₂)_nOMs, N(CH₃)-(CH₂)_nOTs, N(CH₃)-(CH₂)_nOMs, O-(CH₂)_nOTs, O-(CH₂)_n-OMs, CONH(CH₂)_nOTs or ONH(CH₂)_nOMs, wherein OM_s corresponds to mesylate and OTs to tosylate, together with instructions for the production of a

Atty. Dkt. No. PN/4-33144A (093286-0104)
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compound of formula I wherein R₂ is NH(CH₂)_n¹⁸F, N(CH₃)-(CH₂)_n¹⁸F, O-(CH₂)_n¹⁸F or CONH(CH₂)_n¹⁸F by a suitable reaction cascade of the starting material with ¹⁸F[⊖].